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ABSTRACT

This document evaluates five protocol material units developed by the Protocol Materials Development Project, University of Colorado. The five units were a) Conceptualizing the Process of Instruction; b) Learners and Their Characteristics: Implications for Instructional Decision-Making; c) Verbal Interaction in the Cognitive Dimension: The Relationships Between Teacher Verbal Behavior and Student Response; d) Organizing Facts to Teach Meaningful Relationships; and e) Fair Verbal Response. The rationale and objectives for evaluation, procedures for conducting field tests, and results are detailed. Procedures are described in four areas: selection of field test instructor and students, selection of the comparison group, the instruments and collection and treatment of the data, and the return of the data. Results are described and conclusions indicated. Appendixes include related research material. (MJM)

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EVALUATION REPORT OF THE 1970-72 PROTOCOL MATERIALS UNITS DEVELOPED BY THE PROJECT MATERIALS DEVELOPMENT PROJECT UNIVERSITY OF COLORADO

SP 006 339

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PREFACE

The five protocol materials units evaluated in this report were developed by the Protocol Materials Development Project, University of Colorado, under a grant from the Department of Health, Education and Welfare, United States Office of Education, OEC-0-70-4045 (725). The period of funding for the research, development, testing, and evaluation of these products was from July 1, 1970 through December 31, 1972. The total amount of the grants for that period was $105,604. A rough, total cost per product from beginning of development to an evaluated, finished product, with multiple reprint capacity, averages about $21,000. The average actual production cost, not including salaries and indirect costs, was about $6,000 for each product.

The five products illustrate concepts important in the preparation of teachers. The concepts were selected and developed with reference to the basic Pedagogical Plan outlined in the USOE Request for Proposal in April 1970. The five products in order of their development are:

1. Conceptualizing the Process of Instruction (One 10-minute 16 mm. black and white sound film; teacher's guide; student handout.)

2. Learners and Their Characteristics: Implications for Instructional Decision-Making (Two sets of color slides, "Attitudes Toward School" and "Instructional Alternatives"; cassette tape to accompany "Instructional Alternatives"; teacher's guide; student profice booklets.)

3. Verbal Interaction in the Cognitive Dimension: The Relationships Between Teacher Verbal Behavior and Student Response (One 15-minute 16mm. black and white sound film; teacher's guide; student handout.)

4. Organizing Facts to Teach Meaningful Relationships (One 14-minute 16mm. color sound film; teacher's guide; student handout.)

5. Fair Verbal Behavior (One 14-minute 16 mm. color sound film; teacher's guide; student handout.)

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EVALUATION REPORT
OF THE 1970-72
PROTOCOL MATERIALS UNITS
DEVELOPED BY THE
PROTOCOL MATERIALS DEVELOPMENT PROJECT
UNIVERSITY OF COLORADO

RATIONALE AND OBJECTIVES FOR EVALUATION

Evaluation is generally defined as the systematic collection, analysis and interpretation of data for the purposes of determining the effectiveness and worth of an educational program or product, and aiding the developers of program or product to make more intelligent decisions concerning its revisions or implementations. Evaluation should consist of descriptions of the inputs, processes and outcomes, as well as of judgements of various components of the program or product.

The developers of the University of Colorado Protocol Materials Project asked two questions which served to direct the evaluation study.

1. How effective is each of the five products?*

   Five criteria were used for judging the effectiveness: interest, significance, clarity, sufficiency, and perceived effectiveness. The criteria were assessed by the evaluation questionnaires, the criterion tests, and the post-tests.

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* Conceptualizing the Process of Instruction, Learners and Their Characteristics: Implications for Instructional Decision-Making, Verbal Interaction in the Cognitive Dimension: The Relationship Between Teacher Verbal Behavior and Student Response, Organizing Facts to Teach Meaningful Relationships, and Fair Verbal Behavior.

2. Is the University of Colorado Protocol Materials approach different from conventional approaches in teacher education courses?

Two criteria were used for judging the difference: interest and worthwhileness, as indicated by students and instructors on the Evaluation Questionnaires.

PROCEDURES FOR CONDUCTING FIELD TEST

The evaluation study was conducted as part of an extensive field test of the materials in various teacher education institutions around the country.

Selection of Field Test Instructors and Students

It was determined by the project staff that the materials should be tested in both social science methods classes and in general methods classes in undergraduate teacher preparation programs in colleges and universities in different geographical regions of the United States and in both urban and rural areas. Social science methods classes were selected because the classroom episodes used in the films and slide-tapes are all set in social studies classrooms. Further, the academic backgound of the projdect staff is largely in the social sciences, and the concepts included in the five products were selected because of their presumed relevance to successful teaching and learning in secondary social studies classes. The staff was interested in finding out differences in effects of the protocol materials on students in general methods classes and in social science methods classes.

The director of the project contacted key educators in the various geographic regions and asked for names of instructors in colleges and universities in that general area who might be interested in participating in the field test. Telephone calls were made to about twenty persons and from those five social science methods instructors and five general methods instructors were selected for the experimental groups. Of those ten the

director was personally acquainted with three. The names and institutional affiliation of the ten instructors appear in Appendix A.

All instructions and materials were sent by Air Express to the instructors during the last week in March, 1972. For every instrument administered to the students, a large, stamped return envelope was provided. The instruments or questionnaires were to be returned to the project staff as soon as they had been administered. Instructors in the experimental classes had the prerogative to decide when and in what order to teach the protocol units. Some classes were on the semester system which brought the materials into the middle of the semester,and some classes were just beginning the spring quarter.

Selection of the Comparison Group

The comparison or control group consisted of five social science methods classes. The project staff assumed that students in social science methods classes would already have had general methods classes and would probably have a more sophisticated under standing of the concepts employed in the protocol units than the general methods students. The selection of such classes for control would give a fairer test of the five products. The instructors were selected by the director from among persons suggested by educators at universities in different parts of the country. Three of the five control instructors were acquainted with the project director. A list of control instructors and their institutions appears in Appendix A.

Mailing of instructions, background questionnaires, and pre-tests took place in late March. Stamped return envelopes were provided for mailing materials back to the project staff. Post-tests were mailed in early May.

The Instruments*, Collection, and Treatment of the Data

The instruments used to collect the data were constructed by the University of Colorado Protocol Materials Development staff according to the objectives of the project and in order to answer the two evaluative questions: "How effective is each product?" and "Is the Protocol approach different from conventional approaches in teacher education courses?"

A. "How effective is each product?"

Five criteria were mentioned in the development proposal of the University of Colorado Protocol Materials Development Project. These are: significance, interest, sufficiency, clarity, and effectiveness. These criteria were assessed by Student and Instructor Evaluation Questionnaires administered after use of each protocol unit. The criteria were defined and assessed in the following ways:

Significance has two aspects: 1.) the importance of the ideas taught in the protocol units; and 2.) the importance and worth of the activities introduced to teach these ideas. The Student and Instructor Evaluation Questionnaires, administered at the end of each unit, contained these questions which measured significance on a Likert scale.

The concepts dealt with in this protocol are worthwhile for teacher preparation.

SA A N D SD

The discussion following the film (or slides) was not very significant.

SA A N D SD

Interest was usually expressed in comparative terms on the Student and Instructor Evaluation Questionnaires. The following are examples

* See Appendix B

of items used to assess the degree of interest in the materials.

Compared to what normally takes place in my education courses, this protocol unit was more interesting.

SA A N D SD

This color film was better and more interesting than the same film would have been in black and white.

SA A N D SD

Sufficiency refers to the adequacy of the protocol in general, and more specifically to the adequacy of the separate component parts such as the quality of the films, the acting in the sequences, or the organization of activities. Examples of items which assessed this criterion are the following:

This protocol unit needs major revision before further use.

SA A N D SD

(Instructor) I felt a need for more background to answer student questions.

SA A N D SD

Clarity refers to the concepts developed in the protocol as well as to the instructions to Field Test instructors on how to conduct the activities and tests. The following items exemplify the assessment of clarity:

(Instructor) The objectives of the protocol unit were made clear to me by the instructor's guide.

SA A N D SD

The differences in teaching strategies of the two teachers in the film were difficult to see.

SA A N D SD

Effectiveness as measured by the Evaluation Questionnaires refers to the perception on the part of the student and instructor that the protocol materials were successful in achieving their purposes and did so better than other kinds of education courses would be able to do.

I have learned less from this protocol than from other activities in education courses.

SA A N D SD

(Instructor) I will use this protocol unit again in my education courses.

SA A N D SA

Each of the six criteria (differentiating between "significance of concept" and "significance of activities") was assessed by a subset of items from the Student Evaluation Questionnaire and from the Instructor Evaluation Questionnaire.

The items on the Evaluation Questionnaire were scored from one to five. A high score was indicative of a positive attitude toward the protocol unit. The average value of the subset of items which represented each criterion was determined for ease of interpretation.

Illustration of three items which measure interest:

1. SA=5 A=4 N=3 D=2 SD=1
   N= 4 5 6 5 4 (Scale Value = 3.30)

Item Mean = 3.00

2. SA=1 A=2 N=3 D=4 SD=5

N= 2 3 9 5 5

Item Mean = 3.33

3. SA=1 A=2 N=3 D=4 SD=5

N= 2 3 5 7 7

Item Mean = 3.58

Scale Value = 3.30

Scale values above 3.0 for both students and instructors were considered as satisfactory fulfillment of the criterion.

Effectiveness was also determined by whether or not the objectives of each product had been met. The assessment measures were the Criterion Tests administered at the end of each protocol materials unit. The Criterion tests differed in form from one product to another, usually conforming to the activities prescribed for the particular unit. Responses to the Criterion Tests were scored by trained raters on the development staff. A high percentage of acceptable responses would be considered as an indication that the criterion of effectiveness had been attained. However, caution is advised on any interpretation of the data. Due to time pressure, the staff-developed instruments were not pre-tested or evaluated. Arbitrary standards for meeting criteria can scarcely be set in the absence of careful preliminary test validation.

B. "Is the University of Colorado Protocol Materials approach different from conventional approaches in teacher education courses?"

This evaluative question was assessed in two ways. All Field Test students and instructors were asked on the Student Evaluation Questionnaires whether the Protocol Materials approach was more interesting and

informative than approaches in other education classes. In addition, Questionnaire "A", "Concepts in Teaching," was administered to the students in both the Field Test classes and the Comparison group at the beginning and end of the time period covered by the field test. The responses of the Field Test group were statistically compared with those of the Comparison group.

Using the pre-test scores as a covariate, a one-factor analysis of covariance was used to compare the responses of the Field Test -- Social Science Methods group, the Field Test -- General Methods group, and the Comparison group. Two objectives for each of the five products served as the dependent variables. The quasi-experimental nature of the design (Campbell and Stanley Design 10) precludes the possibility of drawing causal conclusions from the data, since pre-treatment differences among the groups cannot be ruled out. However, the use of pre-test scores as covariates equates the groups with respect to prior achievement of product objectives.

The following dependent variables were assessed with this design:

1. Conceptualizing the Process of Instruction

   a) Identifying, classifying, analyzing variables that affect learning.
   b) Recognizing the importance of conceptualizing these variables.

2. Learners and Their Characteristics: Implications for Instructional Decision-Making

   c) Recognizing and identifying individual differences in attitudes toward school.
   d) Recognizing the implications of different learner characteristics for arranging instructional alternatives.

3. Verbal Interaction in the Cognitive Dimension: The Relationship Between Teacher Verbal Behavior and Student Response

   e) Recognizing differences in teacher verbal behaviors.
   f) Identifying and analyzing student responses in relation to teacher expectations.

4. Organizing Facts to Teach Meaningful Relationships

   g) Identifying teacher behaviors which indicate teaching for concept attainment.
   h) Recognizing student behaviors which indicate concept learning.

5. Fair Verbal Behavior

   i) Differentiating between teacher verbal behaviors that are fair or unfair.
   j) Recognizing that teacher verbal behavior is related to cognitive, affective and social meanings communicated in the classroom.

Design of Evaluation Study

	Prior to Field Test	After Each Protocol Unit	After Field Test
Field Test Group	Questionnaire "A"	Criterion Tests; Student Evaluation Questionnaires	Questionnaire "A"
Comparison Group	Questionnaire "A"		Questionnaire "A"
Instructor		Instructor Evaluation Questionnaire	

Return of the Data

The disappointment in field testing came when it was time to count returns. One Social Science Methods and one General Methods instructor simply returned the unopened box of materials. Only two Social Science Methods instructors returned all of the data. There were partial returns from the other. All control instructors returned background materials and pre-test data; four control instructors returned post-test data. A table of returns is included in Appendix C.

RESULTS

Description of the Results

In keeping with the purpose of this evaluation, the descriptive findings of the study will be presented as they relate to the evaluative questions, organized by product.

A. How effective is each product?

1. Conceptualizing the Process of Instruction

This product was designed to provide preservice teachers with opportunities to observe some instructional situations and develop a conceptual framework for analyzing the instructional process.

Criterion	Scale Mean	
	Student	Instructors
Significance of Concept	3.45	4.28
Significance of Activities	3.64	3.11
Interest	3.03	2.64
Sufficiency	2.81*	2.82*
Clarity	--	3.49
Effectiveness (Perceived)	3.11	2.85*

* Criterion not satisfactorily achieved

Comments:

The technical quality of the film was rated especially low as was the organization of the protocol unit. Although the instructors might be willing to use the unit in future courses, this protocol was considered no more effective than what normally takes place in

education courses. The comments regarding weak features of the unit included the following: a) it was inflexible with regard to "one correct model"; b) it was too time consuming; and c) it was a little unclear as to intent and directed activities.

The criterion test was a descriptive analysis of a filmed instructional sequence. Students were asked to list and organize their observations. This activity was similar to activities done in the protocol unit. The test was designed to measure the ability of the students to describe and analyze an on-going instructional situation. Responses on five variables were scored by trained raters as either acceptable or unacceptable. The variables and the percentage of respondents (N=53) whose responses were acceptable are as follows:

a) Ability to distinguish and identify discrete instructional variables in a new instructional situation -- 94%.

b) Ability to select out of the many distinguishable variables in the situation those that have the most potential for relating to student learning -- 92%.

c) Ability to see the instructional situation in different dimensions and observe and identify variables that, taken together, would give a complete description of what is going on in a given classroom -- 45%.

d) Ability to express observations in descriptive-analytical language rather than in the form of judgements -- 85%.

e) Ability to organize observations of variables and analytical statements concerning the relationships among variables

within a conceptual framework -- 28%.

As a result of using this protocol unit, students were able to list their observations of an instructional situation in such a way that discrete variables are mentioned. Furthermore, these variables are those which are crucial to student learning. The observations are stated in objective rather than judgemental terms. However, the observations are neither as complete nor as well organized as might be expected.

2. Learners and Their Characteristics: Implications for Instructional Decision-Making

In this multi-media unit, students were introduced to the idea that learner antecedent conditions relate to the process of instruction, acquainted with the types of data which are available to assess learner characteristics, and shown how instructional alternatives can be selected to match individual characteristics.

Criterion	Scale Mean	
	Students	Instructors
Significance of Concept	3.39	4.42
Significance of Activities	3.01	3.58
Interest	3.08	3.66
Sufficiency	2.78*	2.90*
Clarity	--	3.60
Effectiveness (Perceived)	3.00	3.16

* Criterion not satisfactorily achieved

Comments:

Negative reactions centered around the third segment and the criterion test, which some found unclear in intent. Mention was made of the amount of material to be covered in a short time, as well as the contrived nature of some activities.

The instructions for the criterion test directed students to analyze a profile of information on a learner, to decide from among possible alternatives the best choice of objectives, content, strategy, materials, teacher role, media, and grouping arrangement; and to justify their decisions. The response was scored satisfactory if the decision was compatible with the learner's characteristics presented in the profile. According to the scores given by trained raters, 81 percent of the small number of respondents (N=26) gave acceptable responses. The majority of students completing this protocol unit were able to achieve the objectives. However, the achievement rate can not be generalized to the portion of students who did not complete the criterion test.

3. Verbal Interaction in the Cognitive Dimension: The Relationship Between Teacher Verbal Behavior and Student Response

In this protocol unit an analytical framework is provided to assist the student in recognizing variations in teacher verbal behavior which influence the student response. Objectives for the students working with this protocol unit are the following: a) to recognize verbal interaction in the cognitive dimension; b) to identify a unit of analysis useful for

interpreting relationships in verbal interaction; c) to make differentiations of teacher verbal behaviors based on a theoretical framework provided; d) to differentiate between student responses that are productive from those which conform to the teacher's expectations; e) to hypothesize relationships between teacher's verbal behavior and students' reactions; and f) to analyze teacher openness as a variable in interaction.

Criterion	Scale Mean	
	Students	Instructors
Significance of Concept	3.71	4.71
Significance of Activity	3.30	3.72
Interest	3.08	3.14
Sufficiency	2.36*	2.37*
Clarity	2.98*	2.83*
Effectiveness (Perceived)	3.10	3.33

* Criterion not satisfactorily achieved

Comments:

The quality of the sound track was the greatest weakness. The criterion test was viewed as confusing and a contrivance. The jargon and technical language was a draw-back, as were the amount of material to be covered and the lack of clarity of the directions.

The criterion test was based on a filmed classroom discussion. The students were asked to classify the teachers' verbal behavior and to predict the students' responses to two instances of teacher verbal behavior. Only eighteen students responded to this test situation. Of these, 44 percent gave acceptable responses. Fifty

students responded to the second part of the criterion test which was designed to measure the ability to hypothesize the relationship between teacher verbal behavior and student reaction. 48 percent of the respondents gave acceptable answers.

Although the student-perceived and instructor-perceived effectiveness was adequate as measured by the evaluation questionnaires, the responses to the criterion tests were less than adequate. However, there is evidence that it was the criterion test itself which failed, rather than the protocol materials unit itself. The limited number of students who responded attests to this latter interpretation. The instructions were unclear and the reader can only guess what the test developers meant or expected.

As mentioned above, the clarity criterion was not met, largely due to the criterion test itself. Furthermore, the achievement rate cannot be generalized to the portion of students who did not complete the criterion test.

4. Organizing Facts to Teach Meaningful Relationships

The purpose of this protocol materials unit was to assist preservice teachers in identifying the essential attributes of concept teaching and the teacher verbal behaviors inherent in concept teaching. In a film showing two classroom episodes, the students have a chance to recognize and compare instances and non-instances of concept teaching.

Criterion	Scale Mean	
	Students	Instructors
Significance of Concept	3.96	4.60
Significance of Activities	3.31	3.56
Interest	3.37	3.30
Sufficiency	3.22	2.90*
Clarity	3.96	3.71
Effectiveness (Perceived)	3.37	2.70*

* Criterion not satisfactorily achieved

Comments:

The criterion test is a transcript of a teaching sequence in which the students were asked to indicate whether the characteristics of concept teaching were being used or violated by the teacher. Of the small number (N=21) responding, half were able to give an acceptable number of characteristics. About half of the respondents were able to identify learner responses which are indicative of concept learning. Half of the respondents were able to recognize that the teacher verbal behavior was an instance or a non-instance of concept teaching. The effectiveness criterion for this unit was not satisfactorily attained by the proportion responding. Again, the results cannot be generalized to the population of field test students.

5. Fair Verbal Behavior

This protocol unit was designed to help preservice teachers differentiate between teacher verbal behaviors that are fair and

those that are not fair, to identify specific teacher behavior patterns associated with fairness, and to recognize the implications of fairness and non-fairness in the pattern of classroom interaction. Color filmed segments of teacher behavior and student response compose the stimulus. Students work with transcripts to identify instances of fair and unfair verbal behavior. They also role play a fair and an unfair teacher reaction to a student response.

Criterion	Scale Mean	
	Students	Instructors
Significance of Concept	4.07	3.28
Significance of Activities	3.35	3.33
Interest	3.85	3.66
Sufficiency	2.80*	3.07
Clarity	--	2.78*
Effectiveness (Perceived)	3.49	3.28

* Criterion not satisfactorily achieved

Comments:

Written comments on weak aspects of this unit included: a) the scholary orientation; b) technical jargon; c) contrived filmed situations; and d) a redundant, useless criterion test with unclear instructions for its use.

The criterion test was composed of role-played responses to a series of student comments. One response was to be a fair response, another an unfair verbal response. Of the thirty-three students who completed this test, 94 percent gave satisfactory responses,

indicating that this part of the protocol unit objectives had been met.

Summary

For all five protocol products, it can be said that both the ideas dealt with and the activities used to deal with them were considered worthwhile and significant by both students and instructors. The interest level of the protocol units was good with the exception that instructors did not consider Conceptualizing the Process of Instruction to be of interest to the students. Learners and Their Characteristics: Implications for Instructional Decision-Making, Verbal Interaction in the Cognitive Dimension: The Relationship Between Teacher Verbal Behavior and Student Response, and Fair Verbal Behavior were perceived as effective by both students and instructors, while the latter group did not consider Conceptualizing the Process of Instruction and Organizing Facts to Teach Meaningful Relationships to be as effective as alternative approaches to teacher education. Fair Verbal Behavior and Verbal Interaction in the Cognitive Dimension: The Relationship Between Teacher Verbal Behavior and Student Response suffered from a lack of clarity. Sufficiency was the criterion which was not met most often, usually as a result of the technical quality of the audio-visual components. Considering effectiveness in terms of meeting product objectives, few general comments can be made, primarily due to the response rate, but also due to the nature of the criterion tests.

B. Is the University of Colorado Protocol Materials Development Project approach different from conventional approaches to teacher education in terms of outcomes?

Questionnaire "A", entitled "Concepts in Teaching," was administered to the field test students and comparison group students before and after the field test period. Subsets of this questionnaire (groups of three or four items) related to different product objectives. A one-factor analysis of covariance, with pre-test as covariate, was used to assess the differences in means of three groups: 1) Field Test -- Social Science Methods classes; 2) Field Test -- General Methods classes; and 3) Comparison groups. The results of this analysis are presented below for each of the products. The statistical tables are presented in Appendix D.

1. Conceptualizing the Process of Instruction

a) "Identifying, classifying, analyzing the variables that affect learning." Although the pre-test significantly reduced the unexplained variance, there were no significant mean differences among the groups.

b) "Recognizing the importance of conceptualizing these variables." There were significant adjusted mean differences among the groups; however, the differences were between Social Science Methods and Comparison Group on the one hand, and General Methods on the other!

Adjusted Mean for Social Science Methods = 11.95
Adjusted Mean for Comparison Group = 12.23
Adjusted Mean for General Methods = 11.26

2. Learners and Their Characteristics: Implications for Instructional Decision-Making

c) "Recognizing and identifying individual differences in attitudes toward school." Despite the significant contribution of the pre-test used as a covariate, there were no significant post-treatment differences in the adjusted means.

d) "Recognizing the implications of different learner characteristics in arranging instructional alternatives." On this dependent variable there were reliable differences in the adjusted means of the group. In this case, General Methods and Comparison Group means were approximately equivalent, with the mean for Social Science Methods indicating relatively less achievement on this variable.

Adjusted Mean for Social Science Methods = 9.67
Adjusted Mean for General Methods = 10.54
Adjusted Mean for Comparison Group = 10.89

3. Verbal Interaction in the Cognitive Dimension: The Relationship Between Teacher Verbal Behavior and Student Response

e) "Recognizing differences in teacher verbal behavior." The adjusted mean for Social Science Methods was significantly higher on this variable than were those of the other two groups.

Adjusted Mean for Social Science Methods = 12.93
Adjusted Mean for General Methods = 11.38
Adjusted Mean for Comparison Group = 11.41

f) "Identifying and analyzing student responses in relation to teacher expectations." The adjusted mean for the Social Science Methods group was significantly greater than those for

the General Methods or the Comparison groups.

Adjusted Mean for Social Science Methods = 12.62
Adjusted Mean for General Methods = 9.96
Adjusted Mean for Comparison Group = 9.59

4. Organizing Facts to Teach Meaningful Relationships

g) "Identifying teacher behaviors which indicate teaching for concept attainment." The adjusted mean for the Social Science Methods group was significantly greater than those for the General Methods group and the Comparison groups.

Adjusted Mean for Social Science Methods = 11.57
Adjusted Mean for General Methods = 9.96
Adjusted Mean for Comparison Group = 9.59

h) "Recognizing student behaviors which indicate teaching for concept attainment." No reliable differences were found among the groups on this variable.

5. Fair Verbal Behavior

i) "Differentiating between fair and unfair teacher verbal behaviors." There were significnat differences among the means of the three groups. However, the mean for the Comparison group was significantly greater than those for either of the field test groups.

Adjusted Mean for Social Science Methods = 11.33
Adjusted Mean for General Methods = 11.32
Adjusted Mean for Comparison Group = 12.77

j) "Recognizing that teacher verbal behavior is related to cognitive, affective, and social meanings communicated in the classroom." There were no significant differences among

the means of the three groups on this variable.

Taken together, the results from Questionnaire "A", given to Field Test and Comparison groups, indicated that those students who used the protocol materials were no more likely to fare well on these measures than were students in conventional educational classes. Within the limitation of the Questionnaire for measuring these variables, the use of the protocol materials did not differentiate the testing population, that is, those who had used them from those who had not. This finding interacts with the differences found between Social Science Methods and General Methods, however. Perhaps the focus on social science classes in the protocol films provided an advantage to the Social Science Methods group, although even this is not consistent from variable to variable. Furthermore, an inspection of the means of the different classes themselves suggests that there may have been within-group, between-class differences. This implies that the instructor characteristics, student entry behavior, etc. should be considered in setting up future field tests and that the unit of analysis should be the classroom.

Although the above analysis deals with differences in <u>outcomes</u> between the protocol approach and conventional teacher training methods, items on the Student and Instructor Evaluation Questionnaires dealt with differences in <u>process</u>. These were assessed by items such as the following: "Compared to what normally takes place in

my education courses, this protocol unit was more interesting."

Protocol	Scale Mean	
	Students	Instructors
Conceptualizing the Process of Instruction	2.82	2.53
Learners and Their Characteristics	2.92	3.16
Verbal Interaction in the Cognitive Dimension	3.04	3.25
Organizing Facts to Teach Meaningful Relationships	3.19	2.70
Fair Verbal Behavior	3.38	3.28

Both students and instructors apparently perceived that the processes of Verbal Interaction in the Cognitive Dimension: The Relationship Between Teacher Verbal Behavior and Student Response and Fair Verbal Behavior taught them more than what they would ordinarily learn in a teacher education course. Instructors, but not students, thought that Learners and Their Characteristics: Implications for Instructional Decision-Making offered a better approach than the conventional, while students felt that way about Organizing Facts to Teach Meaningful Relationships.

Judgements of the Results

Judgements are a necessary part of evaluation. Different perspectives on an educational product are held by consumers, developers, and the evaluators, all of whom can interpret the evaluation data in different ways. Each can find an answer to the evaluative questions from the data gathered.

A. The Evaluator's View

Looking at the protocol products and the data gathered by the development staff, I am impressed mainly by two things. The first impressive aspect is the tremendous amount of effort that has gone into the five units as well as the quality of conceptualization that must have gone into the planning and development of the product. Secondly, I am impressed with the commitment on the part of the staff to seek empirical answers to developmental questions. This commitment is lacking in too many educational endeavors. The empirical answers, however, were not as straight-forward and unequivocal as I would have liked. Indeed, whether the products were given a fair test or not may be in doubt. The developmental process should contain, between prototype development and field test, an intermediate step of pilot test, in which a potential consumer can go over each step under the watchful eye of the developer. This step should be taken to clarify ambiguities in instructions, etc., but most of all to evaluate the instruments, assess their reliability, content validity at least, and their appropriateness prior to the field test. If the Protocol staff had been able to take this step, several problems would have been averted. These problems centered around clarity of instructions and testing expectations to some extent, but most importantly to the tests themselves. The failure of more than half of the students to take the criterion tests speaks to this point. The failure to achieve the effectiveness criterion (for some products) could have had as much to do with the tests as with the products themselves. The same point is true for Questionnaire "A",

"Concepts in Teaching," which was never pre-tested and evaluated.

Certain other aspects of the evaluation speak more definitively. One is the worth of the concepts and instructional activities perceived for all products by both instructors and students and the high level of interest generated. It is also noticeable that the technical quality of the media components was often less than adequate. The level of ideas and language may have been too much for the field test instructors to grasp.

Despite the weaknesses mentioned, my own impressions of the Protocol Project -- both processes and products -- is very positive. It is a worthwhile contribution to teacher education.

B. The Developer's View

The data gathered in the field tests indicates to me that the concepts we selected are worthy of development as protocol materials. The attempt to "conceptualize the process of instruction" may be an exception, and I would use the idea for an overview or for a criterion test rather than as a protocol. In any case, the episodes will have to be redone with vastly improved sound.

The field test gave clear direction for revisions in specific products:

Learners and Their Characteristics: Implications for Instructional Decision-Making needs a completely different criterion test and less contrived classroom activities. The cassette-tape which accompanies Part III, "Instructional Alternatives,"

needs to be re-recorded for a more natural effect, and the entire unit needs to be shortened.

Verbal Interaction in the Cognitive Dimension: The Relationship Between Teacher Verbal Behavior and Student Response needs a new criterion test and the film will have to be reworked to improve the sound in some episodes.

Organizing Facts to Teach Meaningful Relationships requires clarification in instructions in the guide.

Fair Verbal Behavior needs a revised and simplified teacher's guide and a new criterion test.

All of the criterion tests, when revised, need to be pre-tested for reliability and validity.

The data suggests that the Protocol Materials approach is more interesting to students than conventional approaches and that instructors will use such materials (as revised) in planning future courses. It appears that the Colorado materials are more appropriate for Social Studies Methods classes than for General Methods classes because of the content of the classroom episodes and because the process dimension of protocols is familiar to Social Science Methods teachers.

The revisions outlined above, including pre-testing of instruments and remaking one film, can be accomplished in 4-6 months. The estimated cost would be $15,000.00, including salaries and materials.

I need to add that our expectations for the field test were not met, primarily due to the pressure of time. We felt we had an obligation to test the products in the spring of 1972 so that the products would

be ready for use or revision in September 1972. The field test instructors had no time to preview the products before using them in class; we had no money to provide for an inservice workshop for instructors and they had to depend on the guides for direction as to use. Many instructors simply did not give the criterion tests. Others ran out of time to try all five units.

We have reported the data as we have it. More complete returns might have given better information on the two evaluative questions we asked.

C. The Consumer's View

As a prospective consumer, I would consider very seriously using these Protocol materials. In support of this judgement, I offer the following comments.

The use of imaginative films and other media in a methods course is attractive to me. The data gathered from this evaluation does indicate that one of the strong features of the material is its perceived interest and worthwhileness by both students and teachers. I also am impressed by the effort that went into evaluating these materials. Although the evaluation is far from unequivocally supportive, it helps the user to identify troublesome aspects of the materials.

An area of concern, according to this evaluation, is the comparison of these materials to traditional classroom methods. When one invests in a classroom innovation, it is necessary to realize a commensurate gain in the instruction of that classroom. There is little indication that

the students in the experimental group learned more on the criteria selected than those in the control group. This, however, is not discouraging for at least a couple of reasons. Firstly, the subjects indicated a disenchantment with the criterion tests that were administered. In addition, a relatively small number of subjects completed the tests. The reliability and validity of the instruments is at least, if not more, suspect than the films. Further analysis of the tests is needed. Other shortcomings in the material was its sufficiency in achieving their instructional goals. Given the dimensions of learning covered by the material, it is unreasonable to suspect sufficient coverage. These materials, in my judgement, ought to be used to supplement other materials and methods in a course rather than substitute for them.

Overall, these materials received a sound rating from both students and teachers. In using social science methods classes for the control group, the designers of this evaluation made it not more fair, as they suggested, but more rigorous. Personally I would use the materials in a general methods class rather than a social science methods class. The objectives of the materials are aimed more at teacher training in general and the content is not necessarily social science based.

As a potential consumer, some serious questions do come to mind. It was mentioned with several of the units that the educational jargon and the technical quality of the films were distractive to the users. Given this, it would be more accurate to say that I am a prospective trial or field tester of the material rather than a final consumer. It sounds as if the Protocol Product has a good deal of potential but is one revision away from the market.

APPENDICES

APPENDIX A

List of Field Test and Comparison Group Instructors

ADDRESS LIST
FIELD TEST INSTRUCTORS

Social Science Methods Experimental

Lichtenberger, Edgar (55 students)
School of Education
University of Texas at El Paso
El Paso, Texas 79968
(915) 584-7130

Mackey, James (25 students)
School of Education
Peik Hall 152A
University of Minnesota
Minneapolis, Minnesota
( ) 373-9721

Pratt, Robert (20 students)
University of Northern Iowa
Cedar Falls, Iowa
( ) 273-2362

Schieffer, Joseph (35 students)
San Fernando Valley State
18111 Nordhoff
Northridge, Calif. 91324
(213) 885-2581

Smith, Sallie W. (20 students)
Teachers College, Columbia University
525 W. 120 Street
P.O. Box 222
New York, New York 10027
(212) 870-4257

General Methods Experimental

Burnham, Glen (40 students)
Division of Education
Adams State College
Alamosa, Colorado 81101
589-7936

Carpenter, Ruth (25 students)
Florida State University
916 West Park Avenue
Tallahass-e, Florida 32306

Farrer, Kenneth C. (20 students)
School of Education
Education Building 104
Utah State University
Logan, Utah 84321
( ) 752-4100, Ext. 7385

Ochoa, Tony (20 students)
Mexican American Studies
Calif. State College at Hayward
25800 Hillary
Hayward, Calif. 94542
(415) 884-3263

Tack, Marionette (30 students)
Department of Secondary Education
San Jose State College
125 South 7th
San Jose, Calif. 95114
(408) 277-2642

Social Science Methods Control

Clegg, Ambrose, Jr. (45 students)
120 Miller Hall
University of Washington
Seattle, Washington 98195
(206) 543-6636

Davis, Daniel F. (25 students)
Ohio State University
1945 North High Street
Columbus, Ohio 43210
(614) 422-1080

Kirby, Darrell (35 students)
P.O. Box 3 AC
New Mexico State University
Las Cruces, New Mexico 88001
(505) 646-1429

Kleg, Milton (20 students)
College of Education
University of South Florida
Tampa, Florida 33620

Richburg, Robert (30 students)
Colorado State University
Fort Collins, Colorado
(303) 491-6009

APPENDIX B

Instruments

INSTRUCTOR BACKGROUND INFORMATION

1. NAME_____ HOME ADDRESS_____

   COLLEGE OR
   UNIVERSITY_____ _____

   ADDRESS_____ HOME PHONE_____

   _____.

   OFFICE PHONE_____

2. Approximate number of semester hours you have taken in:

   _____ Social Sciences (History, Anthropology, Sociology, etc.)

   _____ Educational Psychology

   _____ Curriculum and Instruction

   _____ Other area(s) of emphasis in Education (Please specify)

   _____

   _____

3. How many years of teaching experience do you have at the college level? _____

4. How many years of teaching experience do you have at the secondary or elementary level? _____Secondary _____Elementary

5. What was your undergraduate major?_____

6. Major for Masters Degree?_____

7. Major for Doctorate Degree?_____

8. How many students are in the class you are using to try out the materials?

   _____

9. What dates will you be using the materials for the field test?

   From_____to_____.

   What days and times does the class meet?

   _____ _____ _____

10. What texts or other published materials, if any, would you use in the pre-service methods course you normally teach? (Answer on back of sheet)

11. What major topics would you cover in the pre-service course you would normally teach? What is the relative emphasis on each of those topics? (Answer first part on back of sheet)

TOPIC	DEGREE OF EMPHASIS
_____	_____
_____	_____
_____	_____
_____	_____

INSTRUCTOR EVALUATION QUESTIONNAIRE
for
Conceptualizing the Process of Instruction

Instructor's Name_____ Date_____

_____ 1. How much class time in minutes did you spend on this protocol unit?

2. Describe the procedure you used in presenting this protocol materials unit. Did you use the suggestions in the guide? Any variations?

_____

_____

_____

_____

3. What do you think was the main thing your students learned from this protocol unit?

_____

_____

_____

_____

Indicate your degree of agreement with each statement. Mark your responses in the space provided before each question.

SA = Strongly agree A = Agree N = No opinion D = Disagree
SD = Strongly disagree

_____ 4. The concepts dealt with in this protocol unit are worthwhile for teacher preparation.

_____ 5. Compared to what normally takes place in education courses, this protocol unit was more interesting.

_____ 6. The students learned less from this protocol unit than from other activities in education courses.

_____ 7. The students found the film boring.

_____ 8. The picture quality of the film needs improvement.

_____ 9. The audio quality of the film needs improvement.

_____10. Having students list their observations from the first two episodes of the film was worthwhile.

_____11. Working in small groups to classify their observations was a worthwhile activity for students.

Conceptualizing the Process of Instruction (con't.)

_____12. Having transcripts of the classroom episodes in the film for reference was very helpful.

_____13. Having students draw a model of the process of instruction wasn't a very worthwhile activity.

_____14. Writing a descriptive analysis of the last episode in the film was a worthwhile activity for students.

_____15. The content of the three classroom episodes in the film needs to be more varied.

_____16. It bothered me that all three episodes in the film depicted social studies classrooms.

_____17. The suggestions for teaching procedures are clearly described in the guide.

_____18. I felt a need for more background to answer student questions.

_____19. This protocol unit needs to be better organized.

_____20. The objectives of the protocol unit were made clear to me by the instructor's guide.

_____21. I will use this protocol unit again in my education courses.

_____22. This protocol unit needs major revisions before further use.

23. In the space below discuss the weakest feature of this protocol unit and what can be done to improve it.

24. Any other comments?

INSTRUCTOR EVALUATION QUESTIONNAIRE
for
Learners and Their Characteristics:
Implications for Instructional Decision-Making

Instructor's Name_____ Date_____

_____ 1. How much class time in minutes did you spend on this protocol unit?

2. Describe the procedure you used in presenting this protocol materials unit. Did you use the suggestions in the guide? Any variations?

_____

_____

_____

_____

3. What do you think was the main thing your students learned from this protocol unit?

_____

_____

_____

_____

Indicate your degree of agreement with each statement. Mark your responses in the space provided before each question.

SA = Strongly agree A = Agree N = No opinion D = Disagree
SD = Strongly disagree

_____ 4. The concepts dealt with in this protocol unit are worthwhile for teacher preparation.

_____ 5. Compared to what normally takes place in education courses, this protocol unit was more interesting.

_____ 6. The students learned less from this protocol unit than from other activities in education courses.

_____ 7. The students found the slides on "Student Attitudes Toward School" interesting.

_____ 8. The quality of the slides on "Student Attitudes Toward School" needs improvement.

_____ 9. The slides on "Student Attitudes Toward School" stimulated a significant discussion.

_____10. Working with the student profiles was worthwhile for my students.

_____11. The students felt working with the student profiles was boring.

Learners and Their Characteristics (con't.)

_____12. The quality of the slides on "Instructional Alte tives" needs improvement.

_____13. The audio quality of the cassette tape accompanying the slides on "Instructional Alternatives" needs improvement.

_____14. The slide tape on "Instructional Alternatives" wasn't very informative for my students.

_____15. The students felt the slide-tape on "Instructional Alternatives" was interesting.

_____16. Working with the student profiles following the slide-tape on "Instructional Alternatives" was worthwhile.

_____17. The suggestions for teaching procedures are clearly described in the guide.

_____18. I felt a need for more background in order to answer student questions.

_____19. This protocol unit needs to be better organized.

_____20. The objectives of the protocol unit were made clear to me by the instructor's guide.

_____21. I will use this protocol unit again in my education courses.

_____22. This protocol unit needs major revisions before further use.

23. In the space below discuss the weakest feature of this protocol unit and what can be done to improve it.

24. Any other comments?

INSTRUCTOR EVALUATION QUESTIONNAIRE
for
Verbal Interaction in the Cognitive Dimension:
The Relationship between Teacher Verbal Behavior
and Student Response

Instructor's Name_____ Date_____

_____ 1. How much class time in minutes did you spend on this protocol unit?

2. Describe the procedures you used in presenting this protocol materials unit. Did you use the suggestions in the guide? Any variations?

_____

_____

_____

_____

3. What do you think was the main thing your students learned from this protocol unit?

_____

_____

_____

_____

Indicate your degree of agreement with each statement. Mark your responses in the space provided before each question.

SA = Strongly agree A = Agree N = No opinion D = Disagree
SD = Strongly disagree

_____ 4. The concepts dealt with in this protocol are worthwhile for teacher preparation.

_____ 5. Compared to what normally takes place in education courses, this protocol unit was more interesting.

_____ 6. The students learned less from this protocol unit than from other activities in education courses.

_____ 7. The students found the film boring.

_____ 8. The picture quality of the film needs improvement.

_____ 9. The audio quality of the film needs improvement.

_____10. The discussion of the analytical framework developed by Macdonald and Zaret wasn't very significant.

_____11. Watching the first two episodes of the film and marking the matrices was a worthwhile activity for students.

_____12. The overprint that described the interaction in the classroom confused students.

_____13. The purpose of predicting the responses in episode three wasn't clear to me.

_____14. Having transcripts of the classroom episodes in the film for reference was very helpful.

_____15. This unit was teaching the Macdonald-Zaret framework, rather than focusing on one way to look at verbal interaction.

_____16. The three episodes of the film illustrated the cognitive dimension of verbal interaction.

_____17. The suggestions for teaching procedures are clearly described in the guide.

_____18. I felt a need for more background to answer student questions.

_____19. This protocol unit needs to be better organized.

_____20. The objectives of the protocol unit were made clear to me by the instructor's guide.

_____21. I will use this protocol unit again in my education courses.

_____22. This protocol unit needs major revision before further use.

23. In the space below discuss the weakest feature of this protocol unit and what can be done to improve it.

24. Any other comments?

INSTRUCTOR EVALUATION QUESTIONNAIRE
for
Organizing Facts to Teach Meaningful Relationships

Instructor's Name_____ Date_____

_____ 1. How much class time in minutes did you spend on this protocol unit?

2. Describe the procedures you used in presenting this protocol materials unit. Did you use the suggestions in the guide? Any variations?

_____

_____

_____

_____

3. What do you think was the main thing your students learned from this protocol unit?

_____

_____

_____

_____

Indicate your degree of agreement with each statement. Mark your responses in the space provided before each question.

SA = Strongly agree A = Agree N = No opinion D = Disagree
SD = Strongly disagree

_____ 4. The concepts dealt with in this protocol are worthwhile for teacher preparation.

_____ 5. Compared to what normally takes place in education courses, this protocol unit was more interesting.

_____ 6. The students learned less from this protocol unit than from other activities in education courses.

_____ 7. The students found the film boring.

_____ 8. The picture quality of the film needs improvement.

_____ 9. The audio quality of the film needs improvement.

_____10. The lesson was too complicated to teach.

_____11. The work on definitions of related terms was necessary.

_____12. The lists of verbal indicators of concept teaching were helpful.

_____13. The film should have been shown earlier in the unit.

_____14. Analyzing the transcripts of the two episodes was worthwhile.

_____15. Having students make a list of non-examples of verbal indicators of concept teaching was worthwhile.

_____16. The differences in teaching strategies of the two teachers in the film were difficult to see.

_____17. The suggestions for teaching pr-cedures are clearly described in the guide.

_____18. I felt a need for more background to answer student questions.

_____19. This protocol unit needs to be better organized.

_____20. The objectives of the protocol unit were made clear to me by the instructor's guide.

_____21. I will use this protocol unit again in my education courses.

_____22. This protocol unit needs major revision before further use.

23. In the space below discuss the weakest feature of this protocol unit and what can be done to improve it.

24. Any other comments?

INSTRUCTOR EVALUATION QUESTIONNAIRE
for
Fair Verbal Behavior

Instructor's Name_____ Date_____

_____ 1. How much class time in minutes did you spend on this protocol unit?

2. Describe the procedures you used in presenting this protocol materials unit. Did you use the suggestions in the guide? Any variations?

_____

_____

_____

_____

3. What do you think was the main thing your students learned from this protocol unit?

_____

_____

_____

_____

Indicate your degree of agreement with each statement. Mark your responses in the space provided before each question.

SA = Strongly agree A = Agree N = No opinion D = Disagree
SD = Strongly disagree

_____ 4. The concepts dealt with in this protocol are worthwhile for teacher preparation.

_____ 5. Compared to what normally takes place in education courses, this protocol unit was more interesting.

_____ 6. The students learned less from this protocol unit than from other activities in education courses.

_____ 7. The students found the film boring.

_____ 8. The picture quality of the film needs improvement.

_____ 9. The audio quality of the film needs improvement.

_____10. This color film was better and more interesting than the same film would have been in black and white.

_____11. The questions asked during the film didn't seem to serve any useful purpose for my class.

_____12. The behavior of the first teacher in the film was too overdone to be believable.

_____13. The discussion following the film wasn't very significant.

_____14. Analyzing transcripts of the classroom episodes in the film in terms of behavioral indicators seems to help my students better understand the concept of fair verbal behavior.

_____15. Drawing the interaction diagrams did not add anything to the unit for the students in this class.

_____16. It was worthwhile for students to work in groups and enact role-playing dialogues between students and teachers who are fair and unfair.

_____17. The suggestions for teaching procedures are clearly described in the guide.

_____18. I felt a need for more background to answer student questions.

_____19. This protocol unit needs to be better organized.

_____20. The objectives of the protocol unit were made clear to me by the instructor's guide.

_____21. I will use this protocol unit again in my education courses.

_____22. This protocol unit needs major revision before further use.

23. In the space below discuss the weakest feature of this protocol unit and what can be done to improve it.

24. Any other comments?

Protocol Materials Development Project
University of Colorado

STUDENT BACKGROUND INFORMATION and Pre-test (following)

Instructions: The purpose of this questionnaire is to gather information on students who complete University of Colorado Protocol Materials units. Your responses will be kept confidential and be used only to evaluate the materials. You will need an identification number. We suggest you use your Social Security number or your student (matriculation) number. Whatever number you use, IT IS VERY IMPORTANT THAT YOU USE THE SAME NUMBER ON EACH QUESTIONNAIRE YOU COMPLETE FOR THIS PROJECT.

1. Student identification number _____
2. Circle one: M F
3. Grade Point Average (approximate) _____
4. Age _____
5. What is your undergraduate major?_____
6. Do you plan to become a teacher?
   Circle one: Yes No Undecided
7. Have you had any previous teaching experience? Yes No
8. What subject did you teach or plan to teach?_____
9. What level did you teach or plan to teach? (Circle one letter)
   A. Preschool B. Elementary (K-6) C. Secondary (7-12)
   D. Junior college E. College
10. Approximate number of semester/quarter hours in college education courses:
    _____ Number of semester hours
    _____ Number of quarter hours
11. What is your teaching status during this semester/quarter? (Circle one letter)
    A. I am teaching now .
    B. I am student teaching.
    C. I have completed my student teaching.
    D. I plan to student teach at a later date.
    E. Other
12. Describe your present academic status:
    A. Freshman
    B. Sophomore
    C. Junior
    D. Senior
    E. Have completed bachelor's degree.
    F. Have completed master's degree.
13. Have you had experience with children?
    _____ Camp counselor
    _____ Playground supervisor
    _____ School bus driver
    _____ Sunday school teacher
    _____ My own children
    _____ Other (Please describe)

Protocol Materials Development Project
University of Colorado

QUESTIONNAIRE
for
Concepts About Teaching

USE THE SAME NUMBER YOU
USED ON OTHER QUESTIONNAIRES

_____
IDENTIFICATION NUMBER

PART I

Instructions: Please indicate your degree of agreement with each statement. Mark your responses in the space provided before each question.

SA = Strongly agree A = Agree N = No opinion D = Disagree
SD = Strongly disagree

_____ 1. It is all right to correct students when necessary, as long as they are praised when they deserve it.

_____ 2. The factors influencing an instructional situation usually can be identified.

_____ 3. If you criticize students severely for minor things, then you probably won't have any major discipline problems.

_____ 4. Teaching in ways to facilitate and improve meaning is a basic objective of instruction.

_____ 5. One difference that can be established among teachers is the types of questions they ask.

_____ 6. Student involvement is higher in small group discussions than in discussions involving the whole class.

_____ 7. Selecting instructional activities involves straightforward intellectual decisions based on the subject matter.

_____ 8. The classes I teach should be more enjoyable than most classes.

_____ 9. Information about specific characteristics of students is impossible to find.

_____10. Keeping order in the classroom takes priority over pursuit of a task.

_____11. The factors influencing classroom situations can be classified into larger components or categories.

_____12. Students are used to inconsistent feedback and don't give it much thought when they are praised or corrected for no apparent reason.

_____13. Field trips are all right for elementary school, but not for high school.

_____14. Teacher questions are basically alike, but some student answers are better than others.

_____15. I don't have time to worry about how my specific behaviors influence student learning.

_____16. There aren't very many choices available to a teacher when it comes to selecting an instructional program for students.

_____17. It is more important to teach facts than to spend time on deriving interpretations and generalizations from facts.

_____18. Most students accept school as a necessary and valuable experience of their life.

_____19. A teacher should not allow students to get away with things that bother the teacher.

_____20. It is useful to analyze question-answer-response sequences between teachers and students.

_____21. Small group work in the classroom tends to be a waste of time.

_____22. Students tend to respond in ways that reflect the teacher's expectations.

_____23. Responses or comments teachers make are as important as the questions they ask.

_____24. A teacher should let students do things their own way.

_____25. All students are basically alike.

_____26. Praising students who don't deserve it is better than never praising anybody.

_____27. It's much easier to be a good teacher than it is to be a good doctor.

_____28. Decisions about instruction should take into consideration the needs of individual students.

_____29. Students have to create their own knowledge; a teacher cannot give it to them.

_____30. The only way to learn to be a good teacher is to teach for while.

_____31. I have trouble visualizing how the things I read and hear about in education courses would actually influence a particular classroom.

_____32. Visual aids are an unnecessary bother when your objective is teaching concepts.

_____33. It is better to know nothing about a student's background and school records because such information is likely to prejudice your teaching.

_____34. It is more important for a teacher to ask a lot of questions than to select certain kinds of questions to ask.

_____35. Since the best teachers are "born and not made", education courses are a waste of time.

_____36. Students should be asked to apply concepts or principles to unfamiliar situations.

_____37. Irrelevant examples or non-examples should be avoided when teaching a concept.

_____38. Students should be praised, even when they don't deserve it, for motivational purposes.

_____39. Analyzing classroom behaviors, including the teacher's, is an important part of teaching.

_____40. Field trips are valuable experiences for students.

_____41. Students learn in their own way in spite of what the teacher does.

_____42. Every classroom is so different, it's impossible to generalize about the instructional process.

_____43. The sequence of mental activities performed by students cannot and should not be controlled by the teacher.

_____44. What I have learned in my education courses won't matter when I get out into an actual classroom.

_____45. Most things that happen in the classroom influence the total situation in some way.

_____46. Analyzing classroom situations is a necessary part of teaching.

_____47. As long as everything seems to be all right in my classroom, it doesn't matter if I understand exactly what's happening.

_____48. Viewing and analyzing films of classroom situations won't help me be a better teacher.

PART II

1. An English teacher decides that the students in her class should all read and analyze David Copperfield. What given conditions would have the most bearing on the success or failure of her decision? Rank order the following list:

_____ Reading level of the students.

_____ Student attitude toward school.

_____ Subject matter competence of the teacher.

_____ Socio-economic background of the students.

_____ Atmosphere of the community.

_____ Students' previous grades in English.

_____ Scheduling of the class.

_____ Personality of the teacher.

_____ Sex of the students.

_____ Students' level of knowledge in subject matter.

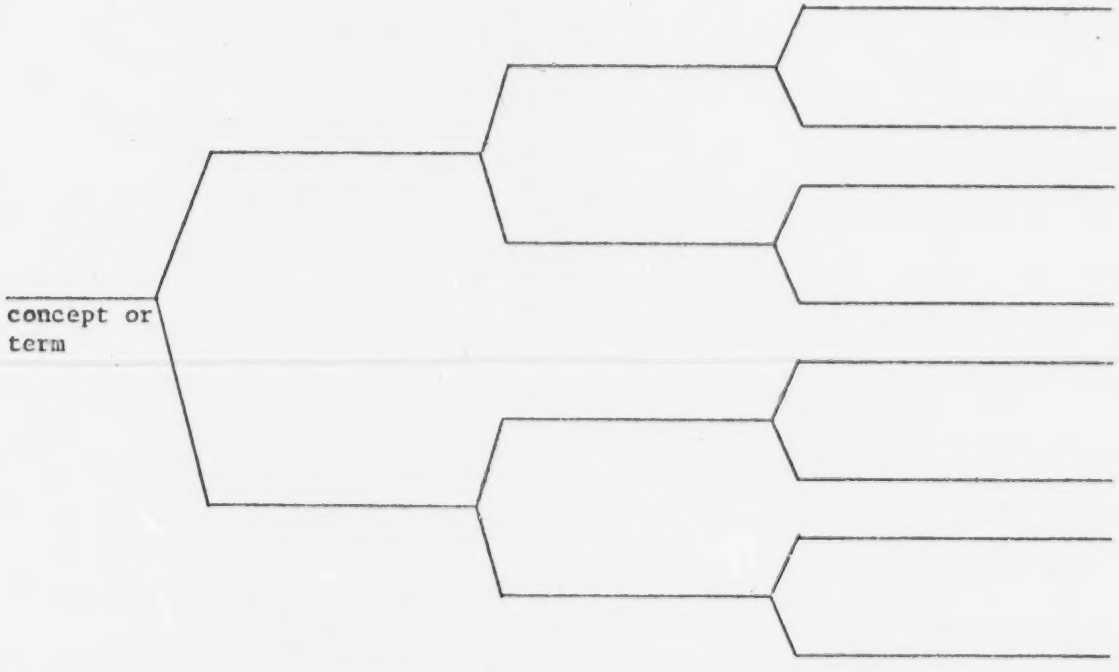
Part II

2. Name three concepts or terms each of which would inclusively describe all the factors on the list below on the right.

1. _____
2. _____
3. _____

teacher
teacher asking questions
teacher praising students
students
students reading books
students working in small groups
movie projector
moveable desk
blackboard

3. Choose one of the concepts or terms you have listed above and divide it into component parts.



4. Write a sentence or two that describes the functional relationship you have diagrammed. Go further than saying something is subsumed by something else or that something is a part of something else. Analyze the relationships you illustrated and describe it.

5. Which unit of analysis would be best for observing the following verbal behaviors. Respond by placing the letter of the unit of analysis in the space provided.

_____ 1. logical exposition in a monologue

_____ 2. study drill

_____ 3. types of questions a teacher asks

_____ 4. appropriateness of teacher feedback

_____ 5. classroom climate

_____ 6. kind of student participation

_____ 7. small group discussions

_____ 8. teacher influence on student level of thought

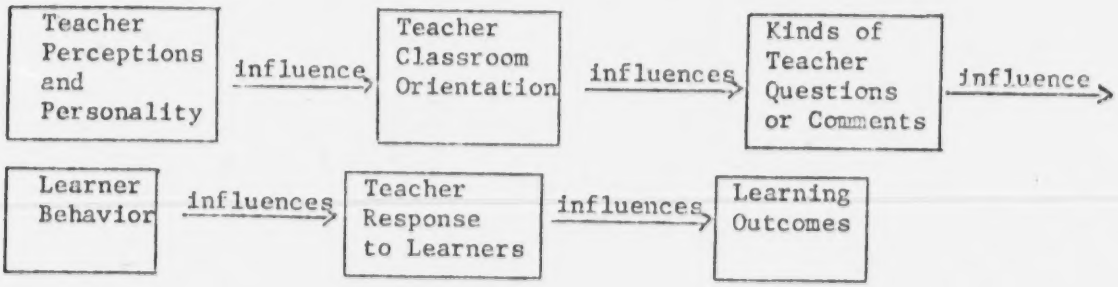
A. question-answer-response

B. one-minute interval

C. question-answer

D. specific comments classified by type

6. What differences would you observe between an <u>open</u> teacher and a <u>closed</u> teacher in verbal interaction in the classroom? Use your analysis of the following model as a guide and synthesize or summarize your thoughts into one or two sentences.



7. You wish to develop the concept "assets" for students in your bookkeeping class. Number in order of occurrence the verbal statements you would make. (You may assume intervening student responses.) Mark a minus (-) by those statements that are irrelevant to teaching the concept.

_____ Jane, are the shoes you are wearing one of your assets?

_____ Why isn't this blackboard one of my assets?

_____ Is your father's car your own asset?

_____ Assets can be defined as "anything that makes up the entire property of a person or a business."

_____ Free enterprise is one of the basic principles of capitalism.

_____ Can you think of a liability you have?

8. A teacher in a middle class suburban community has 35 seventh graders for 50 minute periods each day. She has never taught before and has a B.A. in History. She wants to improve her students' attitudes toward school, but she has to teach State History. Rate the following instructional alternatives as good, average, bad.

_____ students give oral reports

_____ students construct a time line mural

_____ students do research and work in small groups

_____ teacher leads discussion

_____ each student reads a book on the history of the state

_____ students watch a 60-minute movie of excellent calibre

_____ students write papers

_____ students make notebooks

_____ adapt activities from national curriculum projects

_____ teacher lectures

_____ teacher has radical speakers on mistakes the state has made

_____ students make scale models of how their state grew

9. Name five ways to find out information about the characteristics of learners.

1. _____

2. _____

3. _____

4. _____

5. _____

10. Check the verbal behaviors which are appropriate and pertinent in teaching for concept attainment.

_____ The teacher should indicate the accuracy or inaccuracy of the student response.

_____ The teacher should indicate a contrast between examples and non-examples of the category.

_____ The teacher should help the students formulate a definition of the category.

_____ The teacher should avoid asking leading or probing questions.

_____ The teacher should avoid giving examples that do not meet criteria for the concept.

_____ The teacher should ask the students to list and group things, events, or ideas that characterize the concept.

11. Two teachers, X and Y, were observed in their interactions with seventh graders. X was observed instructing tracked classes A and C and Y was observed instructing classes in tracks A and B. Track A is the highest achievement group and Track C, the lowest. Observers concluded that these teachers did not differ their classroom behavior in working with students of different achievement levels. YOU ARE TEACHER "Z" AND TEACH ONE TRACK "A" CLASS AND ONE TRACK "C" CLASS IN YOUR SUBJECT MATTER AREA.

A) What do you think the conclusions derived from observations of your class would be?

B) If your behavior differed between the two classes, describe specifically how it differed.

12. Underline any teacher statement in the following transcript that you think might indicate that the teacher has a strategy for organizing facts to teach the concept, writ of mandamus.

Transcript

Teacher: One of the first and most important court decisions was Marbury versus Madison. Can anyone tell us details of the case?

Student: Marbury received an appointment from Jefferson, but when Madison became president, he refused to sign it and Marbury sued him and the court said OK.

Teacher: Very good! What was that court order called?

Student: A writ of mandamus.

Teacher: Fine! What does that mean?

Student: You got to produce the body in court.

Teacher: No. That's a writ of habeas corpus. Now what is the difference?

Student: Well, the court can order Presidents or anybody to do anything to enforce law.

Teacher: All right. What principle of American government does that illustrate?

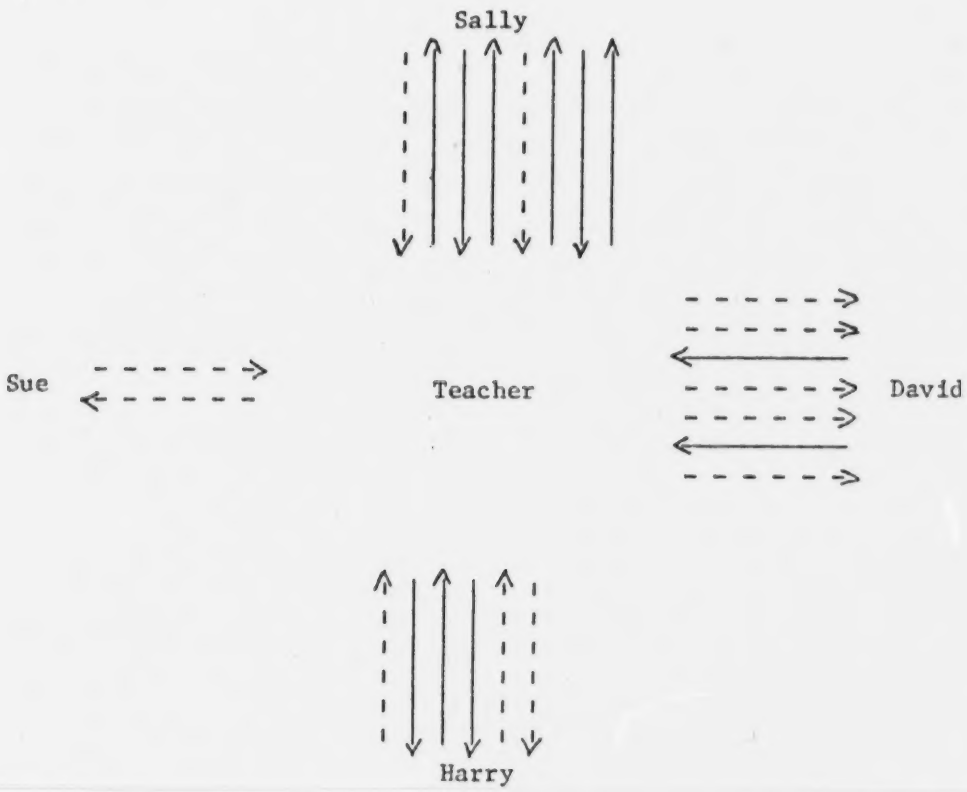
Student: I don't know.

Teacher: The separation of powers between the courts and the President.

Student: Or the federal-state relationship?

Teacher: The case of Marbury versus Madison is one of the most famous in American history because the writ of mandamus order showed that there is a system of checks and balances that works.

13. Analyze the diagram. Describe the type of feedback this teacher is giving in the space below. (150 words)



positive feedback

corrective feedback

correct response or behavior

incorrect response or behavior

14. Generalize the difference between the verbal behaviors of Teachers A and B in relation to the comments or activites of the three students, Sherry, George, and Dick.

George: When a person feels threatened, he is likely to make a strong or violent response.

Teacher A: That's a massive generalization on your part.

Teacher B: Can you give some examples that led you to that conclusion?

Dick: (Reaching in to the aquarium to touch a fish) Gee, what kind is this one?

Teacher A: Get your hands out of there! I've told you all not to touch that aquarium.

Teacher B: That's an Emperor fish, but it will hurt him to touch him.

Sherry: I think that vapor condenses when it hits a warm surface.

Teacher A: That's a good guess. Isn't anyone else willing to try like Sherry?

Teacher B: Tell me where you have seen that happen?

Sherry: (Feeding fish without asking.)

Teacher A: That's very thoughtful of you, Sherry.

Teacher B: We have a schedule for feeding the fish. Check with me before you feed them.

Dick: One reason not many explorers came before Columbus did was because their ships weren't that good then.

Teacher A: Where were you when we talked about the Vikings?

Teacher B: Pursue that idea; it's a good one.

15. Describe in three different ways a teacher who uses fair and unfair verbal behavior. Choose one from Column A and one from Column B to construct each of your responses.

Fair verbal behavior	Unfair verbal behavior
1. _____ _____	1. _____ _____
2. _____ _____	2. _____ _____
3. _____ _____	3. _____ _____

Column A	Column B
1. Praises	A. student behaviors that don't deserve it.
2. Gives in to	B. some student behaviors when they deserve it.
3. Corrects	C. ideas or actions not students personally.
4. Does not correct	D. student behaviors when it is not clear whether they deserve it or not.
5. Does not praise	E. student behaviors when they deserve it.
6. Does not give in to	F. some student behaviors when they don't deserve it.

Read the transcript on the last two pages (pp.14-15) and use it for your response to the following questions:

A. Which teacher question, regardless of the actual student response, would be likely to elicit the highest level of thought in the student response?

a. 1
b. 3
c. 5
d. 9
e. None of the above

B. Which student response is at a higher level of thinking than the others?

a. 2
b. 4
c. 6
d. 10
e. None of the above

C. Which teacher question, regardless of the actual student response, would be likely to elicit the highest level of thought in the student response?

a. 7
b. 11
c. 13
d. 14
e. 16

D. Which student responses can be considered to be above memory level?

a. 10
b. 12
c. 15
d. 17
e. None of the above

E. Which teacher question did elicit the highest level of thinking in student response?

a. 18
b. 20
c. 22
d. 24
e. None of the above

F. Which teacher question is least likely to elicit a high level of thought in the student response?

a. 18
b. 22
c. 24
d. 25
e. 27

G. Which student response is most clearly representative of a memory level response?

a. 23
b. 26
c. 28
d. 30
e. None of the above

H. Approximately what number of the teacher questions generally encourage (enable, support) students? _____

I. Given your answer in "H", would you have hypothesized that the number of student responses that can be considered above memory level would be:

a. Greater than it is
b. About the same as it is
c. Fewer than it is

TRANSCRIPT for QUESTION

Teacher: Okay, let's talk about the story of the success of Little Black Nose. Who can tell us who Little Black Nose was?[1] Steven?

Steven: A steam engine.[2]

Teacher: Can you tell me a little bit more about him?[3]

Steven: No.[4]

Teacher: Where did he come from?[5]

Steven: America.[6]

Teacher: America. Can you tell me about his name?[7]

Steven: No.[8]

Teacher: We have two names, the title of the story, "Little Black Nose", and in the story there was another name.[9] Steven?

Steven: The DeWitt Clinton.[10]

Teacher: Do you remember who DeWitt Clinton was?[11]

Steven: Wasn't he a famous American?[12]

Teacher: Yes, he was a famous statesman, wasn't he. How many of you can think of some things that have been named for famous people?[13] Think of something that has somebody else's name on it, that has been named after somebody.[14] Paul?

Paul: Well, there's a ship that's called The Lincoln, named after Abraham Lincoln.[15]

Teacher: The Lincoln, Okay. Can you think of something else named after somebody?[16] Brent?

Brent: Well, there's the Bell Telephone Company named after Alexander Graham Bell.[17]

Teacher: Very good. Another thing that's been named after somebody, Dwight?[18]

Dwight: Our school is named after someone.[19]

Teacher: Alright, it was named after...[20]

Dwight: John Adams.[21]

Teacher: Can you tell me something about John Adams?[22]

Dwight: He was the second president.[23]

Teacher: That's right! Why do we name things after people?[24] Why do you suppose we give people's names to ships and schools and inventions?[25]

Niel: Well, we wouldn't pick just anybody's name for these things.[26]

Teacher: Why not?[27]

Niel: Well, we might want to represent something.[28]

Teacher: Can you add on to that, Niel?[29]

Niel: Well, maybe the guy they name something after is somebody we should remember, or maybe he was one of the guys who helped invent it.[30]

Protocol Materials Development Project
University of Colorado

STUDENT EVALUATION QUESTIONNAIRE
for
Conceptualizing the Process of Instruction

USE THE SAME NUMBER YOU
USED ON OTHER QUESTIONNAIRES

_____
IDENTIFICATION NUMBER

Instructions: Indicate your degree of agreement with each statement. Mark your responses in the space provided before each question.

SA = Strongly agree A = Agree N = No opinion D = Disagree
SD = Strongly disagree

_____ 1. The concepts dealt with in this protocol are worthwhile for teacher preparation.

_____ 2. Compared to what normally takes place in my education courses, this protocol unit was more interesting.

_____ 3. I have learned less from this protocol than from other activities in education courses.

_____ 4. I found the film to be pretty boring.

_____ 5. The picture quality of the film needs improvement.

_____ 6. The audio quality of the film needs improvement.

_____ 7. Listing observations from the first two episodes of the film was worthwhile.

_____ 8. Working in small groups to classify our observations from the film was worthwhile.

_____ 9. Having transcripts of the classroom episodes in the film for reference was very helpful.

_____10. Drawing a model of the process of instruction wasn't a very significant activity.

_____11. Writing a descriptive analysis of the last episode in the film was a worthwhile activity.

_____12. The content of the three classroom episodes in the film needs to be more varied.

_____13. It bothered me that all three episodes in the film depicted social studies classrooms.

_____14. This protocol unit needs major revisions before further use.

15. In the space below discuss the weakest feature of this protocol unit and what can be done to improve it. Use the back of the page if you need more space.

Protocol Materials Development Project
University of Colorado

STUDENT EVALUATION QUESTIONNAIRE
for
Learners and Their Characteristics:
Implications for Instructional Decision-Making

USE THE SAME NUMBER YOU
USED ON OTHER QUESTIONNAIRES

_____
IDENTIFICATION NUMBER

Instructions: Indicate your degree of agreement with each statement. Mark your responses in the space provided before each question.

SA = Strongly agree A = Agree N = No opinion D = Disagree
SD = Strongly disagree

_____ 1. The concepts dealt with in this protocol unit are worthwhile for teacher preparation.

_____ 2. Compared to what normally takes place in my education courses, this protocol unit was more interesting to me.

_____ 3. I have learned less from this protocol unit than from other activities in my education courses.

_____ 4. The slides on "Student Attitudes Toward School" were interesting.

_____ 5. The quality of the slides on "Student Attitudes Toward School" needs improvement.

_____ 6. The slides on "Student Attitudes Toward School" stimulated a significant discussion.

_____ 7. Working with the student profiles was worthwhile.

_____ 8. Working with the student profiles was boring.

_____ 9. The quality of the slides on "Instructional Alternatives" needs improvement.

_____10. The audio quality of the cassette tape accompanying the slides on "Instructional Alternatives" needs improvement.

_____11. The slide tape on "Instructional Alternatives" wasn't very informative.

_____12. The slide tape on "Instructional Alternatives" was interesting.

_____13. Working with the student profiles following the slide tape on "Instructional Alternatives" was worthwhile.

_____14. This protocol unit needs major revisions before further use.

15. In the space below discuss the weakest feature of this protocol unit and what can be done to improve it. Use the back of the page if you need more space.

Protocol Materials Development Project
University of Colorado

STUDENT EVALUATION QUESTIONNAIRE
for
Verbal Interaction in the Cognitive Dimension:
The Relationship between Teacher Verbal Behavior and Student Response

USE THE SAME NUMBER YOU
USED ON OTHER QUESTIONNAIRES

_____
IDENTIFICATION NUMBER

Instructions: Indicate your degree of agreement with each statement. Mark your responses in the space provided before each question.

SA = Strongly agree A = Agree N = No opinion D = Disagree
SD = Strongly disagree

_____ 1. The concepts dealt with in this protocol are worthwhile for teacher preparation.

_____ 2. Compared to what normally takes place in my education courses, this protocol unit was more interesting.

_____ 3. I have learned less from this protocol unit than from other activities in education courses.

_____ 4. I found the film to be pretty boring.

_____ 5. The picture quality of the film needs improvement.

_____ 6. The audio quality of the film needs improvement.

_____ 7. The discussion of the analytical framework developed by Macdonald and Zaret wasn't very significant.

_____ 8. Watching the first two episodes of the film and marking the matrices was worthwhile.

_____ 9. The overprint that described the interaction in the classroom was confusing.

_____10. The purpose of predicting the responses in episode three was never very clear to me.

_____11. Having transcripts of the classroom episodes in the film for reference was very helpful.

_____12. This unit was teaching the Macdonald-Zaret framework, rather than focusing on one way to look at verbal interaction.

_____13. The three episodes of the film illustrated the cognitive dimension of verbal interaction.

_____14. This protocol unit needs major revisions before its use.

15. In the space below discuss the weakest feature of this protocol unit and what can be done to improve it. Use the back of the page if you need more space.

Protocol Materials Development Project
University of Colorado

STUDENT EVALUATION QUESTIONNAIRE
for
Organizing Facts
To Teach Meaningful Relationships

USE THE SAME NUMBER YOU USED
ON OTHER QUESTIONNAIRES

_____
IDENTIFICATION NUMBER

Instructions: Indicate your degree of agreement with each statement. Mark your responses in the space provided before each question.

SA = Strongly agree A = Agree N = No opinion D = Disagree
SD = Strongly disagree

_____ 1. The concepts dealt with in this protocol are worthwhile for teacher preparation.

_____ 2. Compared to what normally takes place in my education courses, this protocol unit was more interesting.

_____ 3. I have learned less from this protocol unit than from other activities in education courses.

_____ 4. I found the film to be pretty boring.

_____ 5. The picture quality of the film needs improvement.

_____ 6. The audio quality of the film needs improvement.

_____ 7. The subject of the lesson, concept teaching, was too complicated.

_____ 8. The work on definitions was necessary.

_____ 9. There was too much help given on constructing the verbal indicators of concept teaching.

_____10. The film should have been shown earlier in the unit.

_____11. Analyzing the transcripts of the two episodes was worthwhile.

_____12. Making a list of non-examples of verbal indicators from Classroom #2 was worthwhile.

_____13. The differences in teaching strategies of the two teachers in the film were difficult to see.

_____14. This protocol unit needs major revisions before its use.

15. In the space below discuss the weakest feature of this protocol unit and what can be done to improve it. Use the back of the page if you need more space.

Protocol Materials Development Project
University of Colorado

STUDENT EVALUATION QUESTIONNAIRE
for
Fair Verbal Behavior

USE THE SAME NUMBER YOU USED ON OTHER QUESTIONNAIRES

_____
IDENTIFICATION NUMBER

Instructions: Indicate your degree of agreement with each statement. Mark your responses in the space provided before each question.

SA = Strongly agree A = Agree N = No opinion D - Disagree
SD = Strongly disagree

_____ 1. The concepts dealt with in this protocol are worthwhile for teacher preparation.

_____ 2. Compared to what normally takes place in my education courses, this protocol unit was more interesting.

_____ 3. I have learned less from this protocol than from other activities in education courses.

_____ 4. I found the film to be pretty boring.

_____ 5. The picture quality of the film needs improvement.

_____ 6. The audio quality of the film needs improvement.

_____ 7. This color film was better and more interesting than the same film would have been in black and white.

_____ 8. The questions asked during the film didn't serve any useful purpose.

_____ 9. The behavior of the first teacher in the film was too overdone to be believable.

_____10. The discussion following the film wasn't very significant.

_____11. Analyzing transcripts of the classroom episodes in the film in terms of behavioral indicators helped my understanding of the concept - Fair Verbal Behavior.

_____12. Drawing the interaction diagrams of the two classrooms did not add anything to the unit.

_____13. Working in small groups role-play dialogues between students and teachers who are fair and not fair was worthwhile.

_____14. This protocol unit needs major revision before further use.

15. In the space below discuss the weakest feature of this protocol unit and what can be done to improve it. Use the back of the page if you need more space.

Criterion Test -- Conceptualizing the Process of Instruction

INSTRUCTIONS TO OBSERVER

You already have had experience as students in classrooms, and you have some ideas about what goes on in an instructional situation. As you watch each of the short teaching episodes in the film, write down your specific observations about what is happening in that classroom.

EPISODE #1:

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

EPISODE #2:

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

Learners and Their Characteristics -- Criterion Test RATING SCALE

General Objectives: 1.

2.

3.

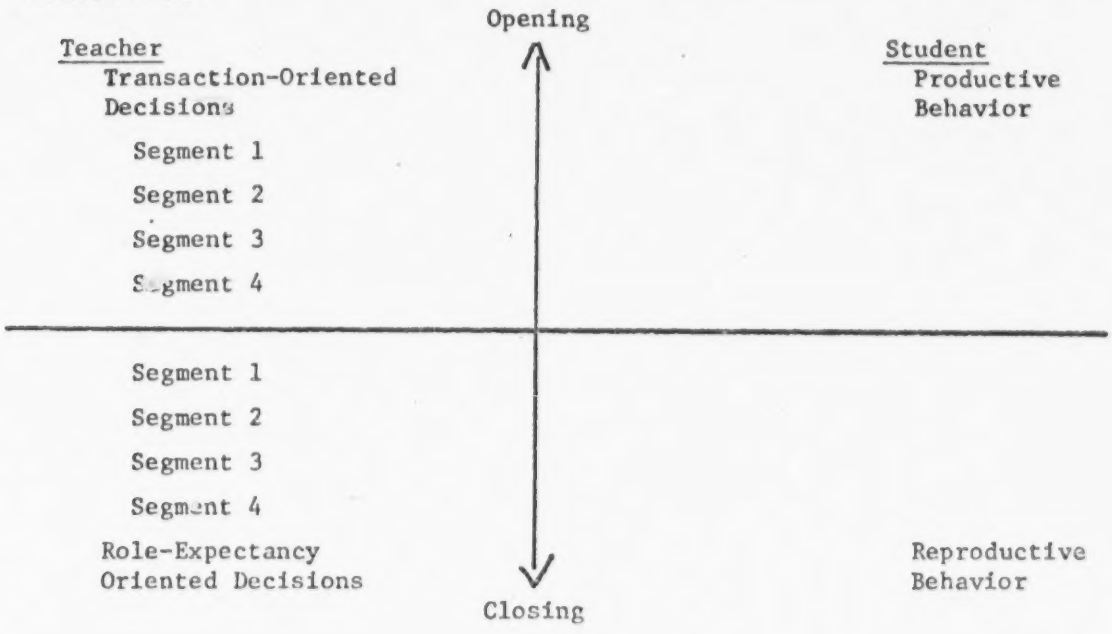
4.

	STUDENTS				TEACHER		CLASSROOM		SCHOOL	COMMUNITY
	Reading Level		Socio-Economic	Attitude Toward School	Knowledge Subject Matter	Openness	Subject Matter Competence	Scheduling	Space	Atmosphere	Atmospher
INSTRUCTIONAL ALTERNATIVES SELECTED BY TEACHER	Mean	Range									
Content:											
Materials:											
Strategy:											
Role:											
Media:											
Grouping:											

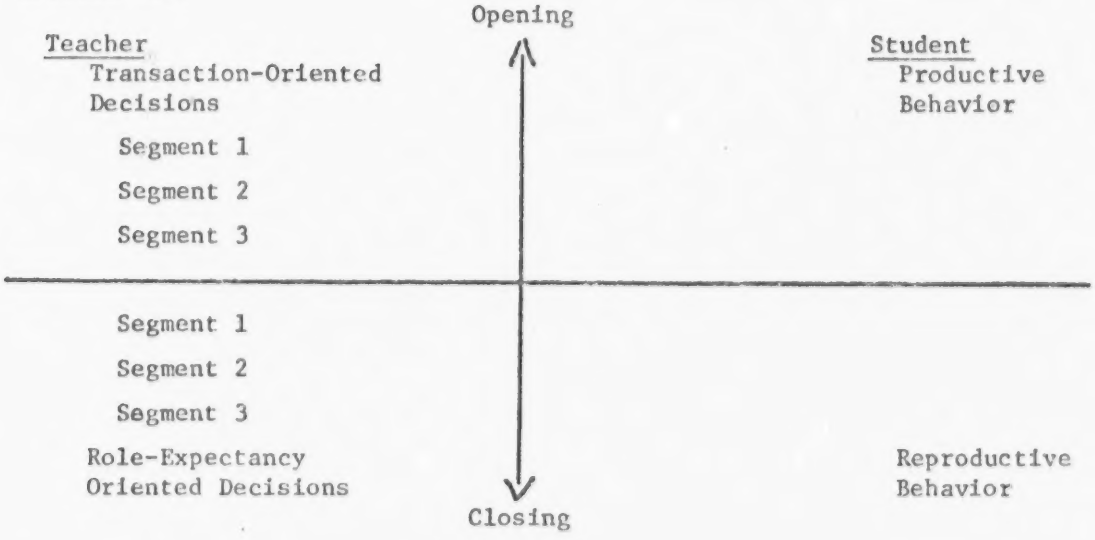
Criterion Test -- Verbal Interaction in the Cognitive Dimension
(test is epsiode 3 -- next page)

Please use the matrices provided below to classify the verbal behaviors in the three classroom episodes presented in the film. Tally each statement either as a productive or reproductive response on the part of a student; or as a transaction-oriented or a role-expectancy oriented response on the part of the teacher.

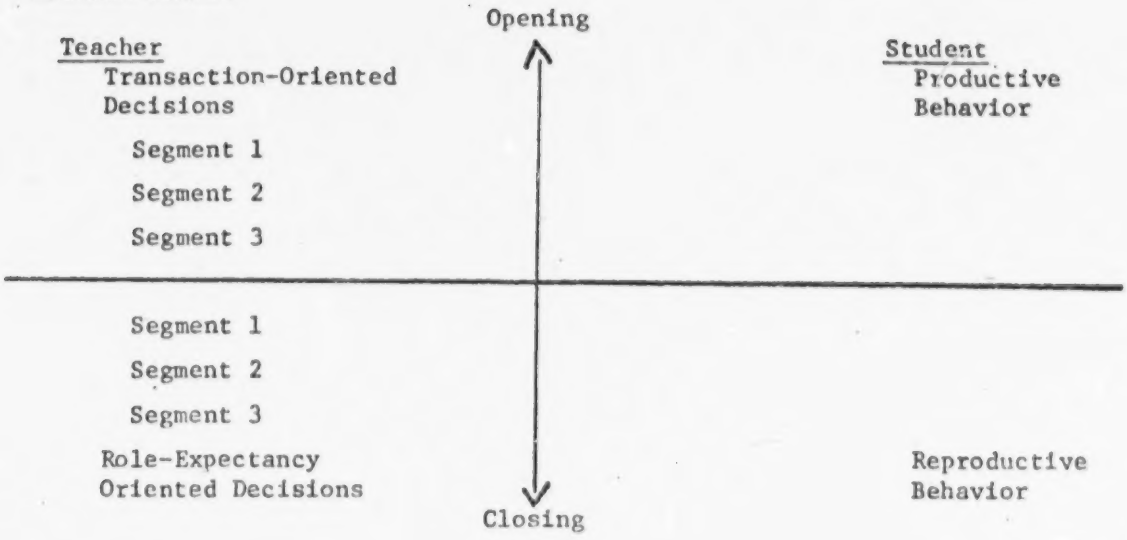
EPISODE ONE:



EPISODE TWO:



EPISODE THREE:



1. Predicted response to "Can he do that?"

2. Predicted response to "How do we get to this?"

---

3. Comments on verbal interaction relationships after viewing all three segments of Episode #3.

ORGANIZING FACTS

TO TEACH

MEANINGFUL RELATIONSHIPS

Test Transcript

Directions

Mark this transcript as indicated below without reference to the lists of verbal indicators. In the left hand column adjacent to respective teacher statements, write the characteristics of concept teaching being used or violated by the teacher. Underline the word, phrase, or sentence that indicates an instance or non-instance of use of a strategy for concept teaching. Above the underlines section write a I for Instance; N-I for Non-instance.

Circle student responses that you interpret as indicative of concept learning. Mark them H for higher order thinking.

Test Transcript for

ORGANIZING FACTS TO TEACH MEANINGFUL RELATIONSHIPS

Verbal Indicators	Transcript
	Tchr: The last time we were talking about democracy it seemed to me we stressed the U.S. Senators and Representatives and the whole structure of the national government so much that you people were coming away with the idea that the only kind of democracy was representative democracy. And we were trying at the end of the period last time to think of another kind of democracy, still democracy, still government by the people in the same way you had defined representative democracy but in a slightly different form. Have you had a chance to think in what other form, in what other way, people make decisions all together about rules and laws that effect them and what that might be called? Anybody have any ideas?
	Stds: (No response.)
	Tchr: How about taking a look at the dictionary definition of democracy? Let's take a look at that and see if it defines the term democracy only as representative democracy. Terri, you want to be our lexicographer?
	Terri: (Looking in large dictionary.) Here it is.
	Tchr: OK, how about reading what you see there? What are those first two definitions?
	Terri: "Government by the people, ruled by the majority, a form of government in which the supreme power is vested in the people and exercised by them directly....A form of government in which the supreme power is vested in the people and exercised by them indirectly through a system of representatives and delegated authority in which the people choose their officials and representatives in periodically held free elections."

Verbal Indicators	Transcript
	Tchr: OK, who heard two different kinds of democracy in there? Did you hear it? Debbie?
	Debbie: There's the indirect democracy when we have the representatives and then the direct democracy when we do the deciding ourselves.
	Tchr: Good. Now can you give an example, not taken from the dictionary or from the U.S. government at the national level which is representative, can you give me an example of the exercise of democratic power directly by the people, or by any group of people? (Debbie shakes her head.) Who can help her out? Pat, do you have an idea?
	Pat: You mean, people don't agree on something that they do?
	Tchr: Well, now wait a second. Let's see if we understand the same thing by direct democracy. Debbie, how did you understand the meaning of direct democracy?
	Debbie: When we ourselves decide things and not have people representing and deciding for us.
	Tchr: Right. That's what it said, didn't it, Terri? (Terri nods.) OK, but give a specific example that you can think of. Even from your life here at school. OK, Jim.
	Jim: Like when you elect a president from the class.
	Tchr: OK, go through the steps so we are sure it's direct and not representative democracy. What would have to happen?
	Jim: Well, ah, you nominate somebody and then you vote on it, and then the majority decides.
	Tchr: Who's the "you"? When you say "you" vote on it, who are you talking about?

Verbal Indicators	Transcript
	Jim: The people in the class.
	Tchr: Everybody in the class? What do the rest of you think? Do you agree?
	Stds: (All agree.)
	Tchr: OK, let's have another example. . . . of direct democracy. Think of something, Gene.
	Gene: Well, like for the captain of the team or something.
	Tchr: OK, who would have to vote?
	Gene: Well, the players.
	Tchr: All of them?
	Gene: Yes.
	Tchr: Now, usually in a democracy, because it means a form of government, usually we are thinking of establishing rules rather than just - say - electing a captain. Could we change your example and ask, if you lay down a new rule for your football team, then all of the players would vote on it and that would be direct democracy?
	Gene: OK.
	Tchr: Let me give you an example and you tell me whether it's representative democracy or direct democracy. Let's see - OK. Let's say that the City Council decided that they wanted to fluoridate the water system - that is, put fluoride in it and presumably cut down on cavities in teeth. That issue has to go to the vote of all the people in the city. Is that an example of representative democracy or direct democracy?

Verbal Indicators	Transcript
	Chuck: Both. Tchr: In what way? Chuck: The representative part is the Council getting something for the people to vote on. You know, they're seeing if the people want something they think they might want. Tchr: OK. Chuck has a very important idea there. He's shown how in that particular issue there is the idea, representative democracy, because we elected the councilmen, but they can't make the decision about the water supply. They are turning it over to everybody to vote on, a use of direct democracy. Do you have any idea why, in the case of putting something in the water supply, everybody would be asked to vote on it and use direct democracy? Amy? Amy: Well, because everybody would be affected and influenced by it. Everybody is going to be drinking the water, so they should have some say over what the drinking water is going to be like. Tchr: An extremely important point. She said "because everybody is going to be influenced by it". That tells us something more about direct democracy. * * * * *

WORKSHEET FOR CRITERION TEST: FAIR VERBAL BEHAVIOR

Instructions: This is a role-playing activity. Work individually or in groups to write a dialogue between 1 - 10 students and Teacher A who exhibits fair verbal behaviors. Use the same student comments, questions or behaviors to create another dialogue with Teacher B, who exemplifies a teacher who does not exhibit fair verbal behaviors. Use the space below to create the two simultaneous dialogues. Check the boxes to indicate whether student behavior is correct or incorrect.

Topic of discussion:

Type of Behavior	Teacher and Student Verbal Behaviors
☐ Correct ☐ Incorrect	Student #___: Teacher A: Teacher B:
☐ Correct ☐ Incorrect	Student #___: Teacher A: Teacher B:

Type of Behavior	Teacher and Student Verbal Behaviors
☐ Correct ☐ Incorrect	Student #___: Teacher A: Teacher B:
☐ Correct ☐ Incorrect	Student #___: Teacher A: Teacher B:
☐ Correct ☐ Incorrect	Student #___: Teacher A: Teacher B:

Worksheet ___ Criterion Test

Type of Behavior	Teacher and Student Verbal Behaviors
☐ Correct ☐ Incorrect	Student #___: Teacher A: Teacher B:
☐ Correct ☐ Incorrect	Student #___: Teacher A: Teacher B:
☐ Correct ☐ Incorrect	Student #___: Teacher A: Teacher B:

Worksheet Criterion Test

Type of Behavior	Teacher and Student Verbal Behaviors	4
☐ Correct ☐ Incorrect	Student #___: Teacher A: Teacher B:	
☐ Correct ☐ Incorrect	Student #___: Teacher A: Teacher B:	
☐ Correct ☐ Incorrect	Student #___: Teacher A: Teacher B:	

Worksheet: Criterion Test

Type of Behavior	Teacher and Student Verbal Behaviors
☐ Correct ☐ Incorrect	Student #___: Teacher A: Teacher B:
☐ Correct ☐ Incorrect	Student #___: Teacher A: Teacher B:
☐ Correct ☐ Incorrect	Student #___: Teacher A: Teacher B:

QUESTIONNAIRE
for
Concepts About Teaching

USE THE SAME NUMBER YOU USED ON OTHER QUESTIONNAIRES

_____
IDENTIFICATION NUMBER

PART I

Instructions: Please indicate your degree of agreement with each statement. Mark your responses in the space provided before each question.

SA = Strongly agree A = Agree N = No opinion D = Disagree
SD = Strongly disagree

_____ 1. It is all right to correct students when necessary, as long as they are praised when they deserve it.

_____ 2. The factors influencing an instructional situation usually can be identified.

_____ 3. If you criticize students severely for minor things, then you probably won't have any major discipline problems.

_____ 4. Teaching in ways to facilitate and improve meaning is a basic objective of instruction.

_____ 5. One difference that can be established among teachers is the types of questions they ask.

_____ 6. Student involvement is higher in small group discussions than in discussions involving the whole class.

_____ 7. Selecting instructional activities involves straightforward intellectual decisions based on the subject matter.

_____ 8. The classes I teach should be more enjoyable than most classes.

_____ 9. Information about specific characteristics of students is impossible to find.

_____10. Keeping order in the classroom takes priority over pursuit of a task.

_____11. The factors influencing classroom situations can be classified into larger components or categories.

_____12. Students are used to inconsistent feedback and don't give it much thought when they are praised or corrected for no apparent reason.

_____13. Field trips are all right for elementary school, but not for high school.

_____14. Teacher questions are basically alike, but some student answers are better than others.

_____15. I don't have time to worry about how my specific behaviors influence student learning.

_____16. There aren't very many choices available to a teacher when it comes to selecting an instructional program for students.

_____17. It is more important to teach facts than to spend time on deriving interpretations and generalizations from facts.

_____18. Most students accept school as a necessary and valuable experience of their life.

_____19. A teacher should not allow students to get away with things that bother the teacher.

_____20. It is useful to analyze question-answer-response sequences between teachers and students.

_____21. Small group work in the classroom tends to be a waste of time.

_____22. Students tend to respond in ways that reflect the teacher's expectations.

_____23. Responses or comments teachers make are as important as the questions they ask.

_____24. A teacher should let students do things their own way.

_____25. All students are basically alike.

_____26. Praising students who don't deserve it is better than never praising anybody.

_____27. It's much easier to be a good teacher than it is to be a good doctor.

_____28. Decisions about instruction should take into consideration the needs of individual students.

_____29. Students have to create their own knowledge; a teacher cannot give it to them.

_____30. The only way to learn to be a good teacher is to teach for while.

_____31. I have trouble visualizing how the things I read and hear about in education courses would actually influence a particular classroom.

_____32. Visual aids are an unnecessary bother when your objective is teaching concepts.

_____33. It is better to know nothing about a student's background and school records because such information is likely to prejudice your teaching.

_____34. It is more important for a teacher to ask a lot of questions than to select certain kinds of questions to ask.

_____35. Since the best teachers are "born and not made", education courses are a waste of time.

_____36. Students should be asked to apply concepts or principles to unfamiliar situations.

_____37. Irrelevant examples or non-examples should be avoided when teaching a concept.

_____38. Students should be praised, even when they don't deserve it, for motivational purposes.

_____39. Analyzing classroom behaviors, including the teacher's, is an important part of teaching.

_____40. Field trips are valuable experiences for students.

_____41. Students learn in their own way in spite of what the teacher does.

_____42. Every classroom is so different, it's impossible to generalize about the instructional process.

_____43. The sequence of mental activities performed by students cannot and should not be controlled by the teacher.

_____44. What I have learned in my education courses won't matter when I get out into an actual classroom.

_____45. Most things that happen in the classroom influence the total situation in some way.

_____46. Analyzing classroom situations is a necessary part of teaching.

_____47. As long as everything seems to be all right in my classroom, it doesn't matter if I understand exactly what's happening.

_____48. Viewing and analyzing films of classroom situations won't help me be a better teacher.

APPENDIX C

Data Return Chart

	BACKGROUND INFORMATION QUESTIONNAIRE	PRE-QUESTIONNAIRE CONCEPTS ABOUT TEACH	CONCEPTUALIZING "INSTRUCTOR EVALUATION"	CONCEPTUALIZING "STUDENT EVALUATION"	CONCEPTUALIZING "STUDENT CRITERIA TESTS"	LEARNERS "INSTRUCTOR EVALUATION"	LEARNERS "STUDENT EVALUATION"	LEARNERS "STUDENT CRITERIA TESTS"	VERBAL INTERACTION	"INSTRUCTOR EVALUATION"	VERBAL INTERACTION "STUDENT CRITERIA TESTS"	FACT VERBAL "INSTRUCTOR EVALUATION"	FACT VERBAL "STUDENT EVALUATION"	FACT VERBAL "STUDENT CRITERIA TESTS"	ORGANIZING FACTS "INSTRUCTOR EVALUATION"	ORGANIZING FACTS "STUDENT EVALUATION"	ORGANIZING FACTS "STUDENT CRITERIA TEST"	POST-QUESTIONNAIRE "CONCEPTS ABOUT TEACH
SOCIAL STUDIES METHODS EXPERIMENTAL																		
Lichtenberger, Edgar	X																	
Mackey, James	X	N=13 X	X	N=12 X	N=8 X	X	N=10 X		X	N=10 X	N=10 X		N=10 X					N=21 X
Pratt, Robert	X	N=15 X	X	N=18 X	N=11 X	X	N=13 X	N=3 X	X	N=12 X	N=11 X	X	N=11 X	N=9 X	X	N=10 X	N=9 X	N=14 X
Schieffer, Joseph	X	N=19 X	X	N=16 X		X	N=20 X	N=12 X	X	N=15 X		X	N=23 X	N=7 X				N=21 X
Smith, Sallie	X	N=10 X	X	N=8 X	N=9 X	X	N=6 X		X	N=8 X	N=8 X	X	N=5 X	N=2 X	X	N=4 X	N=4 X	N=12 X
	5	7 (=7)	4	4 (=4)	3 (28)	4	4 (=4)	1 (15)	4	4 (43)	3 (=3)	5	4 (44)	3 (18)	1	3 (14)	2 (13)	4. (56)
GENERAL METHODS EXPERIMENTAL																		
Burnham, Glen	X	N=25 X	X	N=31 X		X	N=29 X		X	N=32 X		X	N=24 X		X	N=31 X		N=30 X
Carpenter, Ruth																		
Farrer, Kenneth	X	N=20 X	X	N=19 X		X	N=16 X		X	N=19 X		X	N=17 X	N=17 ?	X	N=16 X		N=17 X
Ochoa, Tony	X	N=17 X	X	N=17 X	N=16 X	X	N=14 X	N=12 X	X	N=16 X	N=16 X	X	N=15 X	N=12 X	X	N=12 X	N=8 X	N=15 X
Tack, Marionette		N=8 X		N=15 X	N=9 X		N=7 X			N=12 X	N=12 X		N=11 X			N=19 X		
	3	4 (50)	3	4 (82)	2 (50)	3	4 (64)	1 (12)	3	4 (47)	2 (25)	3	4 (62)	1 (12)	3	4 (39)	1	3 (62)
SOCIAL STUDIES METHODS CONTROL																		
Clegg, Ambrose	X	N=27 X																N=35 X
Davis, Daniel	X	N=14 X																N=13 X
Kirby, Darrell	X	N=27 X																
Rich[illegible]rg, Robert	X	N=15 X																N=14 X
Kleg, Milton	X	N=18 X																N=23 X
	5	5	(=5)														(=5)	5

APPENDIX D

Statistical Tables

Conceptualizing the Process of Instruction

Variable 1: Identify, classify, and analyze variables in instruction

	Source	MS	df	F	
1.	Groups	1.83	2	.33	
2.	Covariate	96.11	1	17.35	$p < .01$
3.	Error	5.54	156		

Adjusted Mean, Social Science Methods = 10.32

Adjusted Mean, General Methods = 9.92

Adjusted Mean, Comparison Group = 10.14

Variable 2: Recognizing the importance of conceptualizing and analyzing variables in instruction

	Source	MS	df	F	
1.	Groups	13.66	2	3.30	$p < .05$
2.	Covariate	181.57	1	43.78	$p < .01$
3.	Error	4.15	156		

Adjusted Mean, Social Science Methods = 11.95

Adjusted Mean, General Methods = 11.26

Adjusted Mean, Comparison Group = 12.23

Learner Characteristics: Implications for Instructional Decision-Making

Variable 3: Recognizing and identifying individual differences in attitudes toward school

	Source	MS	df	F	
1.	Groups	.19	2		
2.	Covariate	167.03	1	40.42	$p < .01$
3.	Error	4.13	156		

Adjusted Mean, Social Science Methods = 10.32

Adjusted Mean, General Methods = 10.24

Adjusted Mean, Comparison Group = 10.35

Variable 4: Recognizing implications for instructional alternatives

	Source	MS	df	F	
1.	Groups	12.37	2	3.79	$p < .05$
2.	Covariate	241.89	1	74.03	$p < .01$
3.	Error	3.27	156		

Adjusted Mean, Social Science Methods = 9.67

Adjusted Mean, General Methods = 10.54

Adjusted Mean, Comparison Group = 10.89

Verbal Interaction in the Cognitive Dimension: The Relationship Between Teacher Verbal Behavior and Student Response

Variable 5: Recognizing differences in teacher verbal behavior

	Source	MS	df	F	
1.	Groups	29.64	2	8.44	$p < .01$
2.	Covariate	645.82	1	183.86	$p < .01$
3.	Error	3.51	156		

Adjusted Mean, Social Science Methods = 12.93

Adjusted Mean, General Methods = 11.38

Adjusted Mean, Comparison Group = 11.41

Variable 6: Identifying and analyzing student responses in relation to teacher expectations

	Source	MS	df	F	
1.	Groups	27.81	2	7.36	$p < .01$
2.	Covariate	103.21	1	27.31	$p < .01$
3.	Error	3.78	156		

Adjusted Mean, Social Science Methods = 12.62

Adjusted Mean, General Methods = 11.32

Adjusted Mean, Comparison Group = 12.59

Organizing Facts to Teach Meaningful Relationships

Variable 7: Identifying teacher behaviors that indicate teaching for concept attainment

	Source	MS	df	F	
1.	Groups	39.06	2	11.53	$p < .01$
2.	Covariate	321.87	1	95.00	$p < .01$
3.	Error	3.89	156		

Adjusted Mean, Social Science Methods = 11.57

Adjusted Mean, General Methods = 9.56

Adjusted Mean, Comparison Group = 9.59

Variable 8: Recognizing student behavior that indicate concept learning

	Source	MS	df	F	
1.	Groups	8.39	2	2.67	
2.	Covariate	280.80	1	89.33	$p < .01$
3.	Error	3.14	156		

Adjusted Mean, Social Science Methods = 11.22

Adjusted Mean, General Methods = 10.35

Adjusted Mean, Comparison Group = 10.44

Fair Verbal Behavior

Variable 9: Differentiating between teacher verbal behaviors that are fair from those that are not fair

	Source	MS	df	F	
1.	Groups	36.01	2	8.07	$p < .01$
2.	Covariate	316.63	1	70.98	$p < .01$
3.	Error	4.46	156		

Adjusted Mean, Social Science Methods = 11.32

Adjusted Mean, General Methods = 11.32

Adjusted Mean, Comparison Group = 12.77

Variable 10: Understanding that teacher verbal behavior is related to cognitive, affective and social meanings communicated in the classroom

	Source	MS	df	F	
1.	Group	6.91	2	2.21	
2.	Covariate	49.57	1	15.82	$p < .01$
3.	Error	3.13	156		

Adjusted Mean, Social Science Methods = 7.08

Adjusted Mean, General Methods = 6.87

Adjusted Mean, Comparison Group = 7.55

END